REMARKS

Enclosed are the substitute drawing sheets correcting the problems noted by the Examiner in Figs. 1, 2, 2a and 4. The indication by the Examiner that "coolant" was misspelled in Fig. 6 is believed to be an error, since the misspelling was found in Fig. 4.

The Examiner rejected claim 395 as being of improper dependent form. This problem is corrected since in independent claim 386 the cooling system was deleted from that claim.

The Examiner rejected claim 74 under 35 U.S.C. §112. It is believed the Examiner intended to refer to claim 374. This problem is corrected since an antecedent basis has been provided in claim 337 for "material".

The Examiner rejected claims 337-342, 356, 383, 385 and 403 under 35 U.S.C. §102(b) as anticipated by Pernick. Claims 343-355, 357-382, 384, 386-402 and 404-407 were rejected under 35 U.S.C. §103 as unpatentable over Pernick.

Claim 337 distinguishes over Pernick for the following reasons. Claim 337 recites a laser radiation source for generating laser beams for processing material by engraving cups in a processing surface, at least two of the outputs are arranged in a first ordering pattern, the laser beams emerging from the outputs being at least one of shaped and aligned such that they impinge onto said processing surface in a second ordering pattern for engraving said cups, and said emerging laser beams having a power density and energy sufficiently high to erode material from said processing surface for creating said cups.

Pernick is not relevant to claim 337 since no cups are engraved in Pernick. Pernick is only directed to beams which are focused onto a detector 34 in an optical correlator using a fiber optics laser. The laser beams in Pernick could never be

powerful enough to engrave cups. In laser engraving, such as laser engraving of a copper surface, the beam or beams are very narrow and of high energy in order to be able to erode the material to create the cups. The ordering in the second ordering pattern of a laser beam emerging from the outputs of the individual fiber lasers permits great speed, modulation ease, power density, and flexibility when cutting the cups in the engraving surface. The laser radiation source of claim 337 allows for cutting of a depth and area of the cuts with great precision and speed.

With the invention of claim 337, cups are engraved by employing laser power which is minimized by use of a high power density. The ability to shape and align the laser beams emerging from the outputs allows for great precision so that the high power density can be accurately directed on the engraving surface.

Pernick is completely different. Pernick is directed to an optical correlator which is known as an optical computer that allows signals to be analyzed and influenced by a Fourier transformation. A Fourier transformation of an object level is found in a backwards focus of a lens which can be manipulated by an optical filter. The transformation back occurs via a further lens in whose focal plane the modified signal can be evaluated by means of detector 34. There is no engraving on the detector 34. Since the detector is light sensitive, only minimal laser powers are required.

Dependent claims 338-385 distinguish at least for the reasons claim 337 distinguishes and also by reciting additional features not suggested.

Independent claim 386 distinguishes in many of the ways noted with respect to claim 337.

Dependent claims 387-402 distinguish at least for the reasons claim 386 distinguishes and also by reciting additional features not suggested.

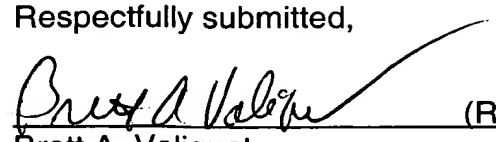
Method claim 403 distinguishes at least by reciting a method for generating laser beams for engraving cups and a processing surface of a material where at least one diode-pumped laser is provided, each fiber laser is provided with at least one output, at least two of the outputs are arranged in a first ordering pattern, and at least one of shaping and aligning the laser beams emerging from the outputs is performed such that they impinge onto said processing surface in a second ordering pattern to engrave said cups by eroding a material of the processing surface, the laser beams having a power density and energy sufficiently high for eroding the material to create the cups. As previously explained, printed laser beams only impact a detector and have nowhere near the power required to erode material to engrave cups.

Dependent claims 404-408 distinguish at least for the reasons claim 403 distinguishes and also by reciting additional steps not suggested in printing.

Additional new claims 409-421 have been added bringing out inventive features. For example, many of these claims are directed to the eroding of cups in copper. All of the claims 409-421 have been carefully drawn to distinguish over Pernick since they each recite that the beams have a power density and energy sufficiently high for eroding the material to create the cups in the engraving. Pernick has nothing like this.

Allowance of the case is respectfully requested.

Respectfully submitted,



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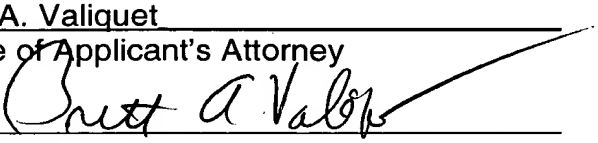

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